A76GMV Motherboard

User's Manual

Statement:

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Version:

User's Manual V1.0 for A76GMV motherboard.

Symbol description:

Caution : refers to important information that can help you to use motherboard better, and tells you how to avoid problems.

Warning : indicating a potential risk of hardware damage or physical injury may exist.

WEEE:

The use of this symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased this product.

More information:

If you want more information about our products, please visit Foxconn's website: http://www.foxconnchannel.com

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All images are for reference only, please refer to the physical motherboard for specific features.

Declaration of conformity

CE

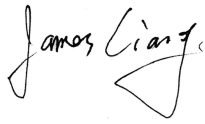
HON HAI PRECISION INDUSTRY COMPANY LTD
66 , CHUNG SHAN RD., TU-CHENG INDUSTRIAL DISTRICT,
TAIPEI HSIEN, TAIWAN, R.O.C.

declares that the product

Motherboard A76GMV

is in conformity with
(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

■ EN 55022:1998/A2: 2003	Limits and methods of measurements of radio disturbance characteristics of information technology equipment
■ EN 61000-3-2/:2000	Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits for harmonic current emissions (equipment input current <= 16A per phase)
■ EN 61000-3-3/A1:2001	Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits of voltage fluctuations and flicker in low voltage supply systems for equipment with rated current <= 16A
■ EN 55024/A2:2003	Information technology equipment-Immunity characteristics limits and methods of measurement

Signature : 

Place / Date : TAIPEI/2010

Printed Name : James Liang

Declaration of conformity

Trade Name:	FOXCONN
Model Name:	A76GMV
Responsible Party:	PCE Industry Inc.
Address:	458 E. Lambert Rd. Fullerton, CA 92835
Telephone:	714-738-8868
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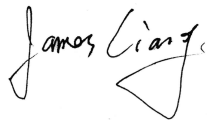
Equipment Classification:	FCC Class B Subassembly
Type of Product:	Motherboard
Manufacturer:	HON HAI PRECISION INDUSTRY COMPANY LTD
Address:	66 , CHUNG SHAN RD., TU-CHENG INDUSTRIAL DISTRICT, TAIPEI HSIEN, TAIWAN, R.O.C.

Supplementary Information:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tested to comply with FCC standards.

Signature :  Date : 2010

Installation Precautions

- Electrostatic discharge (ESD) is the sudden and momentary electric current that flows between two objects at different electrical potentials. Normally it comes out as a spark which will quickly damage your electronic equipment. Please wear an electrostatic discharge (ESD) wrist strap when handling components such as a motherboard, CPU or memory.
- Ensure that the DC power supply is turned off before installing or removing CPU, memory, expansion cards or other peripherals. It is recommended to unplug the AC power cord from the power supply outlet. Failure to unplug the power supply cord may result in serious damage to your system.

Please carefully read the following procedures to install your computer :

- It is suggested to select high-quality, certified fans in order to avoid damage to the motherboard and CPU due to high temperature. Never turn on the computer if the CPU fan is not properly installed.
- We cannot guarantee that your system can operate normally when your CPU is overclocked. Normal operation depends on the overclocking capacity of your device.
- If there is any, when connecting USB, audio, RS232 COM, IrDA or S/PDIF cables to the internal connectors on the motherboard, make sure their pinouts are matching with the connectors on the motherboard. Incorrect connections might damage the motherboard.
- When handling the motherboard, avoid touching any metal leads or connectors.
- If there is a PCI Express x16 graphics card installed in your system, we recommend using a 24-pin ATX power supply to get the best performance.
- Before turning on the power, please make sure the power supply AC input voltage setting has been configured to the local standard.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components. Also, make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

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Technical Support :

Support

Website :
http://www.foxconnchannel.com

Support Website :
http://www.foxconnsupport.com

Worldwide Online Contact Support :
http://www.foxconnsupport.com/inquiry.aspx

CPU Support List :
http://www.foxconnsupport.com/cpusupportlist.aspx

Memory, VGA Compatibility List :
http://www.foxconnsupport.com/complist.aspx

Thank you for buying Foxconn A76GMV motherboard. Foxconn products are engineered to maximize computing power, providing only what you need for break-through performance.
With advanced overclocking capability and a range of connectivity features for today multi-media computing requirements, A76GMV enables you to unleash more power from your computer.

This chapter includes the following information:

- Product Specifications
- Layout
- Back Panel Connectors

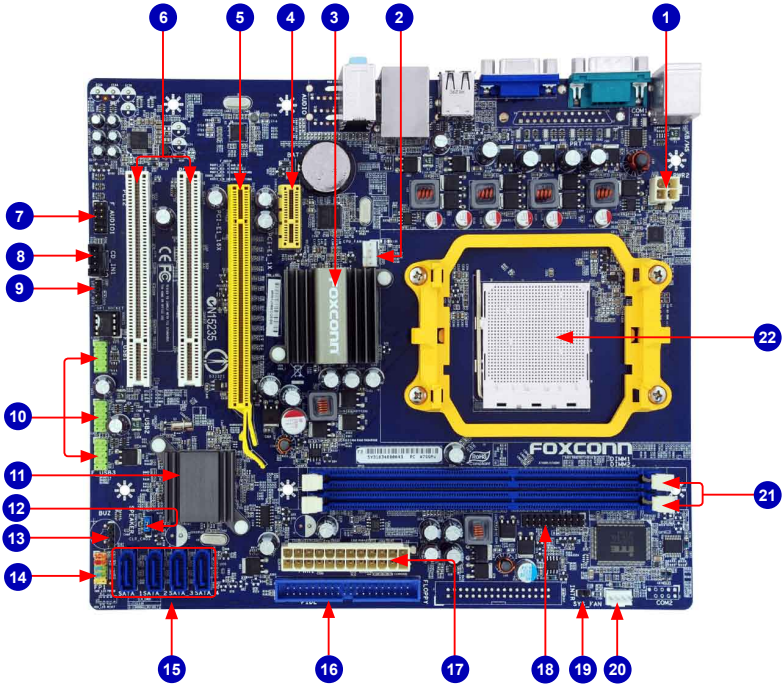
1-1 Product Specifications

CPU	Support AM3 socket processors, Max processor power up to 95W For the latest CPU information, please visit: http://www.foxconnsupport.com/cpusupportlist.aspx
HyperTransport	Up to 4800MT/s (HT3.0) for AM3 CPU
Chipset	North Bridge: AMD 760G South Bridge: SB700 / SB710
Memory	2 x 240-pin DDR3 DIMMs Support up to 8GB of system memory Dual channel DDR3 1333/1066 MHz architecture
Expansion Slots	1 x PCI Express x16 slot 1 x PCI Express x1 slot 2 x PCI slots
VGA	Integrated ATI Radeon HD3000 GPU Support Hybrid CrossFire Dual Independent displays support with DVI and D-SUB Support DirectX 10, Shader Model 4.0
Storage	SB700 / SB710 chipset: -4 X SATA 2.0 connectors -300MB/S data transfer rate -support RAID 0,1,10 -1 x IDE connector
LAN	Realtek 8111E Gigabit LAN chip
Audio	Realtek 662-GR audio chip: - High Definition Audio - 2/4/5.1-channel - Support for S/PDIF Out - Support Jack-Sensing function
USB	Support hot plug Support up to 10 x USB 2.0 ports (4 rear panel ports, 3 onboard USB headers supporting 6 extra ports) Support USB 2.0 protocol up to 480Mb/s

(Continued on the next page)

Internal Connectors	1 x 24-pin ATX main power connector 1 x 4-pin ATX 12V power connector 4 x SATA connectors 3 x USB 2.0 connectors (supporting 6 x USB devices) 1 x CPU fan header (4-pin) 1 x System fan header (4-pin) 1 x Front panel connector 1 x CD_IN connector 1 x Front Audio connector 1 x Speaker connector 1 x SPDIF-OUT connector 1 x TPM connector 1 xChassis intrusion alarm header(INTR) 1 x IDE connector
Back Panel Connectors	1 x PS/2 Keyboard port 1 x PS/2 Mouse port 1 x VGA port 1 x COM1 port 4 x USB 2.0 ports 1 x RJ-45 LAN port 6-channel Audio ports
Hardware Monitor	System voltage detection CPU/System temperature detection CPU/System fan speed detection CPU overheating warning CPU/System fan speed control
PCI Express x1	Support 500MB/s(1GB/s concurrent) bandwidth Low power consumption and power management features
PCI Express x16	Support 8GB/s(16GB/s concurrent) bandwidth Low power consumption and power management features
Green Function	Support ACPI (Advanced Configuration and Power Interface) Support S0 (normal), S1 (power on suspend), S3 (suspend to RAM), S4 (suspend to disk), S5 (soft - off) Support EuP function
Bundled Software	FOX ONE FOX LiveUpdate FOX LOGO FOX DMI
Operating System	Support for Microsoft® Windows® 7/Vista/XP
Form Factor	Micro ATX Form Factor, 9.6inches x 8.4inches (24.4cm x 21.3cm)

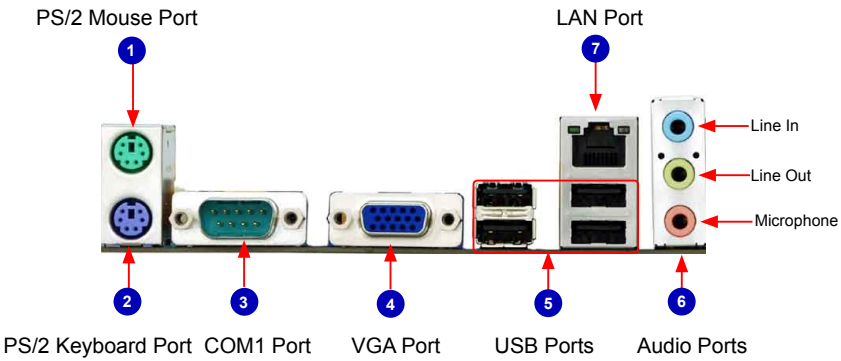
1-2 Layout



1. 4-pin ATX 12V Power Connector
2. CPU_FAN Header
3. North Bridge: AMD 760G
4. PCI Express x1 Slot
5. PCI Express x16 Slot
6. PCI Slots
7. Front Audio Connector
8. CD_IN Connector
9. SPDIF_OUT Connector
10. Front USB Connectors
11. South Bridge: SB710 / SB710
12. Clear CMOS Jumper
13. Speaker Connector
14. Front Panel Connector
15. SATA Connectors
16. IDE Connector
17. 24-pin ATX Power Connector
18. TPM Connector
19. Chassis intrusion alarm header(INTR)
20. SYS_FAN Header
21. DDR3 DIMM Slots
22. CPU Socket

Note : The above motherboard layout is for reference only, please refer to the physical motherboard for detail.

1-3 Back Panel Connectors



1. PS/2 Mouse Port

Use the PS/2 port (green) to connect a PS/2 mouse.

2. PS/2 Keyboard Port

Use the lower port (purple) to connect a PS/2 keyboard.

3. Serial Port

This is output of RS232 COM1 port.

4. VGA Port

To connect with external display devices, such as monitor or LCD display.

5. USB Ports

The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as an USB keyboard/mouse, USB printer, USB flash drive and etc.

6. Audio ports

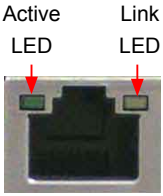
For the definition of each audio port, please refer to the table below :

Port	2-channel	4-channel	5.1-channel
Blue	Line In	Rear Speaker Out*	Rear Speaker Out*
Green	Line Out	Front Speaker Out	Front Speaker Out
Pink	Microphone In	Microphone In	Center/Subwoofer Out*

7. RJ-45 LAN Port

The Ethernet LAN port provides Internet connection at up to 10/100/1000Mb/s data rate.

LAN Type	Left: Active		Right: Link	
	Status	Description	Status	Description
1000M	Off	No Link	Off	No Link
	Green Blinking	Data Activity	Off	10 Mb/s Connection
			Green	100 Mb/s Connection
			Orange	1000 Mb/s Connection



This chapter introduces the hardware and software installation process, including the installation of the CPU, memory, power supply, slots, pin headers and the mounting of jumpers. Caution should be exercised during the installation of these modules. Please refer to the motherboard layout prior to any installation and read the contents in this chapter carefully.

This chapter includes the following information :

- Install the CPU and CPU Cooler
- Install the Memory
- Install an Expansion Card
- Install other Internal Connectors
- Jumpers
- Install driver and utility

Please visit the following website for more supporting information about your motherboard.

CPU Support List:

http://www.foxconnsupport.com/cpusupportlist.aspx

Memory, VGA Compatibility List:

http://www.foxconnsupport.com/complist.aspx

2-1 Install the CPU and CPU Cooler

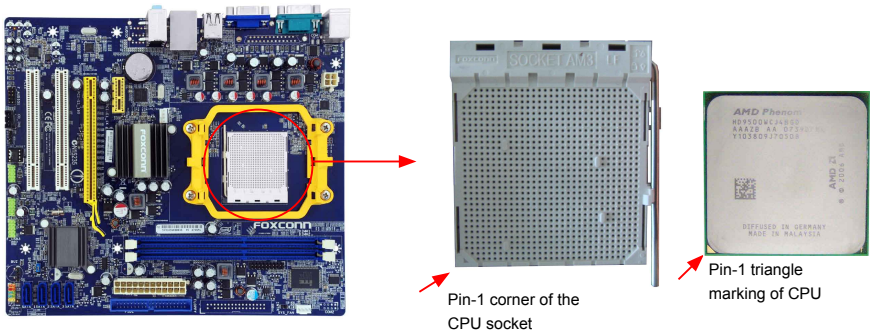
CAUTION

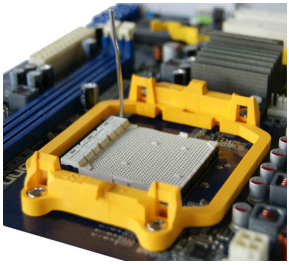
Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
- Always turn off the computer and unplug the power cord from the power supply before installing the CPU to prevent hardware damage.
- Locate the Pin-1 of the CPU. The CPU cannot be inserted if oriented incorrectly.
- Apply an even and thin layer of thermal grease on the surface of the CPU.
- Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur.
- Set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you want to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.

Install the CPU

Locate the Pin-1 CPU triangle mark and the Pin-1 of the CPU socket.





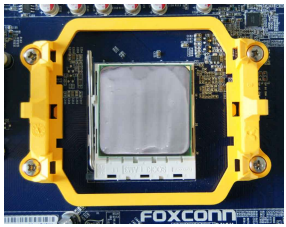
1. Release the CPU socket lever.

2. Align Pin-1 of the CPU with the CPU socket, and gently put the CPU onto the socket.

3. When CPU is properly seated, push the CPU socket lever back to its locked position.

Install the CPU Cooler

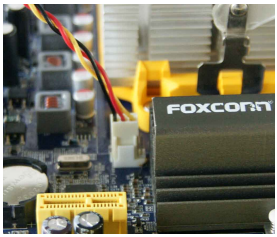
Follow the steps below to correctly install the CPU cooler. (The following procedures use Foxconn cooler as the example.)



1. Apply and spread an even thermal grease on the surface of CPU.

2. Buckle the heatsink firmly at one side of the stand.

3. Buckle the heatsink at another side, and press the fasten lever down to tightly seat the cooler.



4. Attach the CPU cooler connector to the CPU fan header on the motherboard .

CAUTION

Use extreme care when removing the CPU cooler because the thermal grease may adhere to the CPU. Inadequately removing the CPU cooler may damage the CPU.

2-2 Install the Memory

CAUTION

Read the following guidelines before you begin to install the memory :

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

Dual Channel Memory Configuration

This motherboard provides two DDR3 memory sockets and supports Dual Channel Technology. When memory is installed, the BIOS will automatically check the memory in your system.

Two DDR3 memory sockets are divided into two channels :

Channel 0 : DIMM1
Channel 1 : DIMM2

The combinations of DIMM modules are :

	DIMM1	DIMM2
Single Channel	DS/SS	-
Single Channel	-	DS/SS
Dual Channel	DS/SS	DS/SS

(DS : Dual Side, SS : Single Side, - : No Memory)

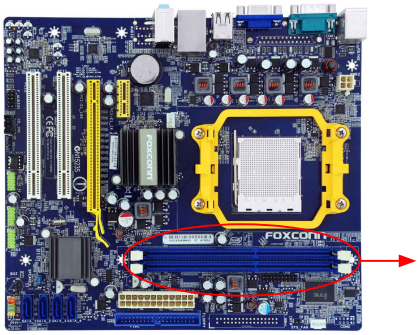
CAUTION

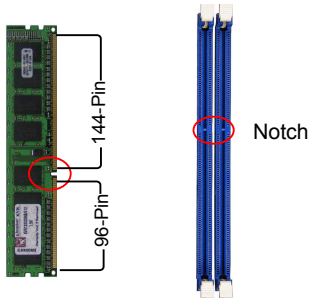
It is recommended that memory of the same capacity, brand, speed, and chips be used and please select dual channel first to achieve optimum performance.

Installing a Memory

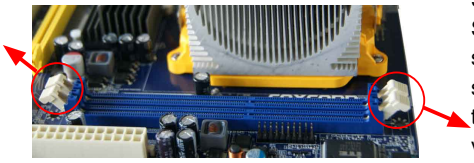
CAUTION

Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module. Be sure to install DDR3 DIMMs on this motherboard.

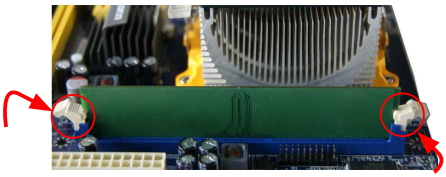




If you take a look at front side of memory module, it has asymmetric pin counts on both sides separated by a notch in the middle, so it can only fit in one direction. Follow the steps below to correctly install your memory modules into the sockets.



Step 1:
Spread the clips at both ends of the memory socket. Place the memory module onto the socket, then put your fingers on top edge of the module, and push it down firmly and seat it vertically into the memory socket.

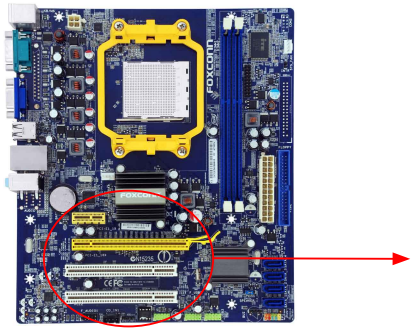


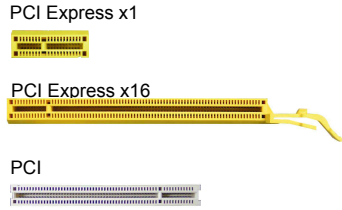
Step 2:
The clips at both ends of the socket will snap into place when the memory module is securely inserted.

2-3 Install an Expansion Card

CAUTION

- Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card.
- Always turn off the computer and unplug the power cord from the power outlet before installing an expansion card to prevent hardware damage.



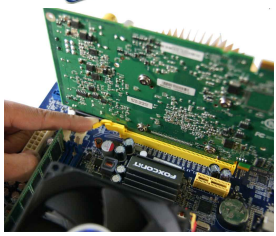


Follow the steps below to correctly install your expansion card in the expansion slot.

1. Locate an expansion slot that supports your card. Remove the metal slot cover from the chassis back panel.
2. Align the card with the slot, and press down on the card until it is fully seated in the slot.
3. Make sure the metal contacts on the card are completely inserted into the slot.
4. Secure the card's metal bracket to the chassis back panel with a screw.
5. After installing all expansion cards, replace the chassis cover.
6. Turn on your computer. If necessary, go to BIOS Setup to make any required BIOS changes for your expansion card(s).
7. Install the driver provided with the expansion card in your operating system.

Installing and Removing a PCI Express x16 Graphics Card :

• Installing a Graphics Card:
Gently insert the graphics card into the PCI Express x16 slot. Make sure the graphics card is locked by the latch at the end of the PCI Express x16 slot.



• Removing the Card:
Push the latch at the end of the PCI Express x16 slot to release the card and then pull the card straight up from the slot.

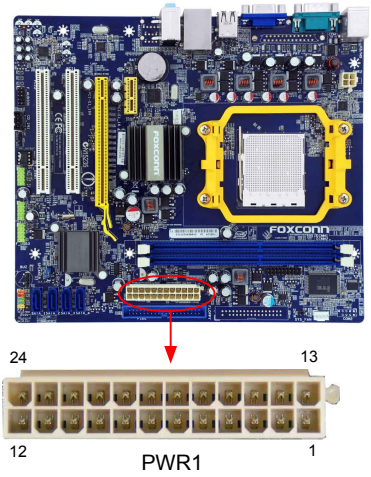
2-4 Install other Internal Connectors

Power Connectors

This motherboard uses an ATX power supply. In order not to damage any device, make sure all the devices have been installed properly before applying the power supply.

24-pin ATX power connector : PWR1

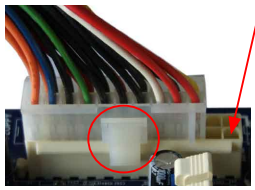
PWR1 is the ATX power supply connector. Make sure that the power supply cable and pins are properly aligned with the connector on the motherboard. Firmly plug the power supply cable into the connector and make sure it is secure.



Pin #	Definition	Pin #	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON(Soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	NC
9	+5V SB(Stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	3.3V	24	GND

CAUTION

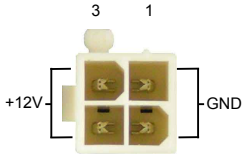
We recommend you using a 24-pin power supply. If you are using a 20-pin power supply, you need to align the ATX power connector according to the picture.



20-Pin Power

4-pin ATX 12 V Power Connector : PWR2

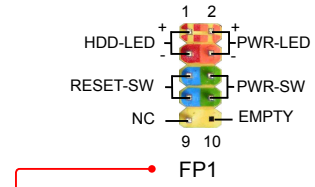
Connect the 4-pin ATX 12V power supply to PWR2 and provides power to the CPU.

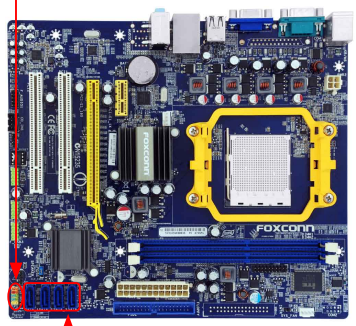


Pin #	Definition
1	GND
2	GND
3	+12V
4	+12V

Front Panel Connector : FP1

This motherboard includes one connector for connecting the front panel switch and LED Indicators.





Hard Disk LED Connector (HDD-LED)

Connect to the chassis front panel IDE indicator LED. It indicates the active status of the hard disks. This 2-pin connector is directional with +/- sign.

Reset Switch (RESET-SW)

Attach the connector to the Reset switch on the front panel of the case; the system will restart when the switch is pressed.

Power LED Connector (PWR-LED)

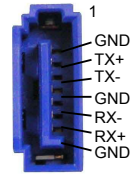
Connect to the power LED indicator on the front panel of the chassis. The Power LED indicates the system's status. When the system is in operation (S0 status), the LED is on. When the system gets into sleep mode (S1) , the LED is blinking; When the system is in S3/S4 sleep state or power off mode (S5), the LED is off. This 2-pin connector is directional with +/- sign.

Power Switch Connector (PWR-SW)

Connect to the power button on the front panel of the chassis. Push this switch allows the system to be turned on and off rather than using the power supply button.

Serial ATA Connectors : SATA_1/2/3/4

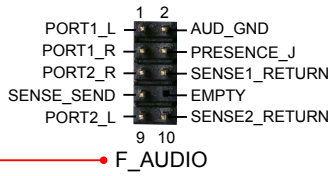
The Serial ATA connector is used to connect with SATA Hard Disk or CD devices which support this feature. The current Serial ATA II interface allows up to 300MB/s data transfer rate.



SATA_1/2/3/4

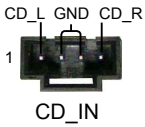
Audio Connector : F_AUDIO

The audio connector supports HD Audio standard. It provides the Front Audio output choice.



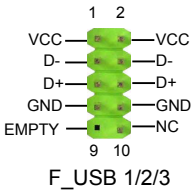
Audio Connector : CD_IN

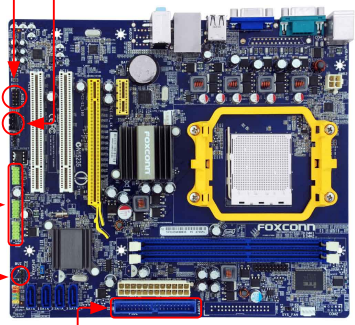
CD_IN is a Sony standard audio connector, it can be connected to a CD/DVD-ROM drive through a CD/DVD audio cable.



USB Connectors : F_USB 1/2/3

In addition to the USB ports on the rear panel, this product also provides three 10-pin USB headers on its motherboard. By connecting through USB cables with them, user can quickly expand another six USB ports on the front panel.





Speaker Connector : SPEAKER

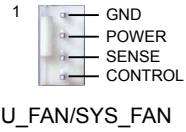
The speaker connector is used to connect speaker of the chassis.

IDE Connector : PIDE

With the provided Ultra DMA IDE ribbon cable, you can connect to any IDE type of hard disk and CD/DVD ROM/RW drive.

Fan Connectors : CPU_FAN, SYS_FAN

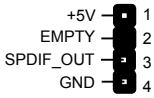
There are two main fan headers on this motherboard. The fan speed can be controlled and monitored in “PC Health Status” section of the BIOS Setup. These fans can be automatically turned off after the system enters S3, S4 and S5 sleeping states.



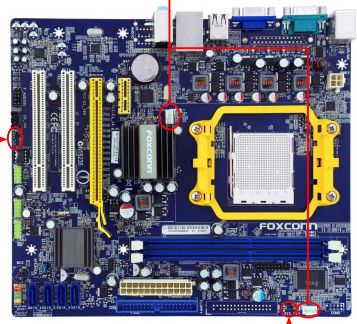
CPU_FAN/SYS_FAN

S/PDIF OUT Connector : SPDIF_OUT

The connector is used for S/PDIF output.

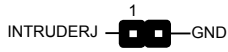


SPDIF_OUT



Chassis Intruder Alarm Connector : INTR

The connector can be connected to a security switch on the chassis. The system can detect the chassis intrusion through the function of this connector. If eventually the chassis is closed, the system will send a message out.



INTR

2-5 Jumpers

For some features needed, users can change the jumper settings on this motherboard to modify them. This section explains how to use the various functions of this motherboard by changing the jumper settings. Users should read the following content carefully prior to modifying any jumper setting.

Description of Jumpers

1. For any jumper on this motherboard, pin 1 can be identified by the bold silkscreen next to it. However, in this manual, pin 1 is simply labeled as “1”.
2. The following table explains different types of the jumper settings. "Closed" means placing a jumper cap on the two pins to temporarily short them. The shorting can also be done by touching two pins by a screwdriver for a few seconds, but using jumper cap is recommended. It can prevent hazardous ESD (Electrical Static Discharge) problem.

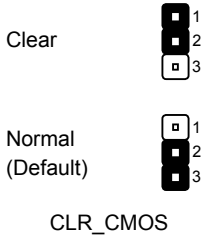
Jumper	Diagram	Definition	Description
1	1	1-2	Set Pin 1 and Pin 2 closed
	1	2-3	Set Pin 2 and Pin 3 closed

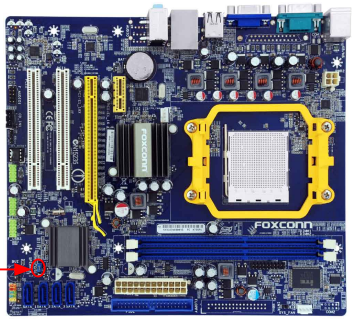
Clear CMOS Jumper: CLR_CMOS

The motherboard uses CMOS RAM to store the basic hardware information (such as BIOS data, date, time information, hardware password...etc.). Clear CMOS data is the fast way to go back to factory default when the BIOS settings were mistakenly modified.

The steps to clear CMOS data are :

1. Turn off the computer, unplug the power cord from the power outlet.
2. Remove jumper cap from pins 2-3, put it onto pins 1-2 to short them. This will clear CMOS data.
3. Return the setting to its original with pins 2-3 closed.
4. Plug in the power cord to your computer and turn it on.
5. Go to BIOS Setup to configure new system as described in next chapter.





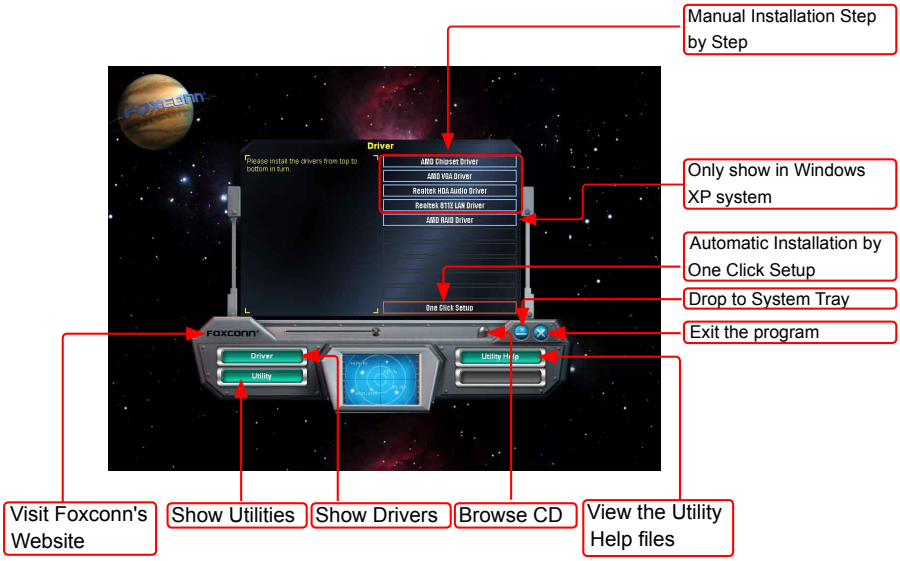
- Disconnect the power cable before adjusting the jumper settings.
- Do not clear the CMOS while the system is turned on.

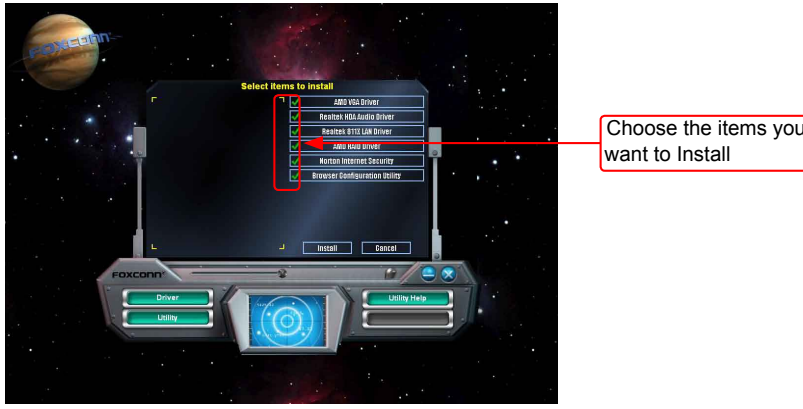
2-6 Install driver and utility

This motherboard comes with one DVD, after installing the Operating System, you can simply put it into your DVD-ROM drive, and the main menu will be displayed on your PC screen to guide you how to install.

1. Driver

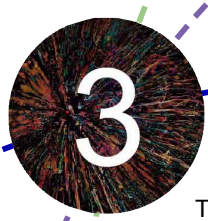
Use these options to install all the drivers for your system. You must click "AMD Chipset Driver" to install it first. After that, you can click ”One Click Setup” and then choose the items you want to install, or you can click on each individual driver to install it manually.





2. Utility

Use these options to install additional utilities. you can click “Utility Help ” button in the main menu to view the utility(FOX ONE, FOX LiveUpdate, FOX LOGO, FOX DMI) help manual.



This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

You have to run the Setup Program when the following cases occur:

1. An error message appears on the screen during the system Power On Self Test (POST) process.
2. You want to change the default CMOS settings.

This chapter includes the following information :

- Enter BIOS Setup
- Main Menu
- System Information
- Advanced BIOS Features
- Core Releaser
- Fox Central Control Unit
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PC Health Status
- BIOS Security Features
- Load Optimal Defaults
- Save & Exit Setup
- Exit Without Saving

Since BIOS could be updated some other times, the BIOS information described in this manual is for reference only. We do not guarantee the content of this manual will remain consistent with the newly released BIOS at any given time in the future. Please visit our website for updated manual if it is available.

Enter BIOS Setup

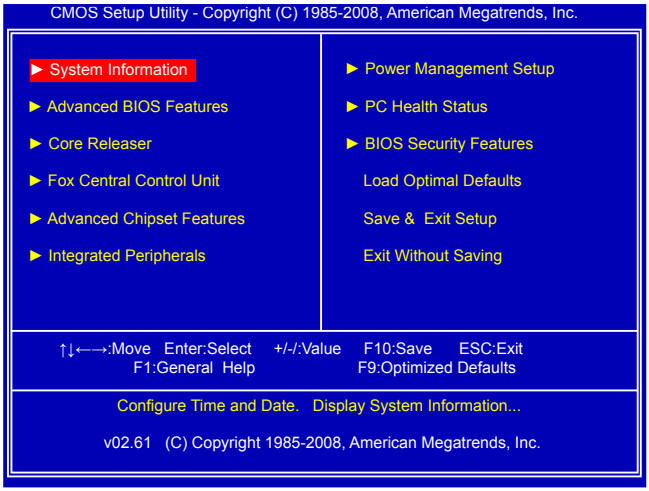
The BIOS is the communication bridge between hardware and software, correctly setting up the BIOS parameters is critical to maintain optimal system performance. Power on the computer, when the message "**Press <DEL> to enter Setup, <ESC> to boot menu**". appears at the bottom of the screen, you can press <DEL> key to enter SETUP.

CAUTION

We do not suggest that you change the default values in the BIOS Setup, and we shall not be responsible for any damage which resulted from the change you made.

Main Menu

The main menu allows you to select from a list of setup functions together with two exit choices. Use the arrow keys to select a specific item and press <Enter> to go to the submenu.
Each item in the main menu is explained below:


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
► System Information
► Advanced BIOS Features
► Core Releaser
► Fox Central Control Unit
► Advanced Chipset Features
► Integrated Peripherals
► Power Management Setup
► PC Health Status
► BIOS Security Features
Load Optimal Defaults
Save & Exit Setup
Exit Without Saving
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults
Configure Time and Date. Display System Information...
v02.61 (C) Copyright 1985-2008, American Megatrends, Inc.

► System Information

It displays the basic system configuration, such as CPU Name, memory size plus system date, time . They all can be viewed or set up through this menu.

► Advanced BIOS Features

The advanced system features can be set up through this menu. There are boot up settings.

► Core Releaser (Enabled only if CPU supports)

The Core Releaser function can be set up through this menu. Setting Options are [Enabled] and [Disabled].

[Enabled]: some CPU hidden Corse may be activated.

[Disabled]: the system will load default CPU cores.

When the message "**Press <F3> to activate Core-Releaser,** " appears at the bottom of the screen, you can press <F3> key to set the Core Releaser to be enabled.

We do not guarantee all CPU hidden Cores can be activated. If system halt or PC can not enter the Operating System, Please press and hold the Power Button until the PC powers off and restart your PC. If PC still does not work at all, it mean that this function can not be enabled. You need clear CMOS or enter BIOS to load default.

► **Fox Central Control Unit**

Some special proprietary features (such as overclocking) can be set up through this menu.

► **Advanced Chipset Features**

The values for the chipset can be changed through this menu, and the system performance can be optimized.

► **Integrated Peripherals**

All onboard peripherals can be set up through this menu. There are IDE devices, Super I/O devices such as Serial I/O and other USB devices... etc.

► **Power Management Setup**

All the items related with Green function features can be set up through this menu.

► **PC Health Status**

This setup enables you to read/change Fan speeds, and displays temperatures and voltages of your CPU/System.

► **BIOS Security Features**

The Supervisor/User password can be set up through this menu to prevent unauthorized use of your computer. If you set a password, the system will ask you to key in correct password before boot or access to Setup.

► **Load Optimal Defaults**

The optimal performance settings can be loaded through this menu.

► **Save & Exit Setup**

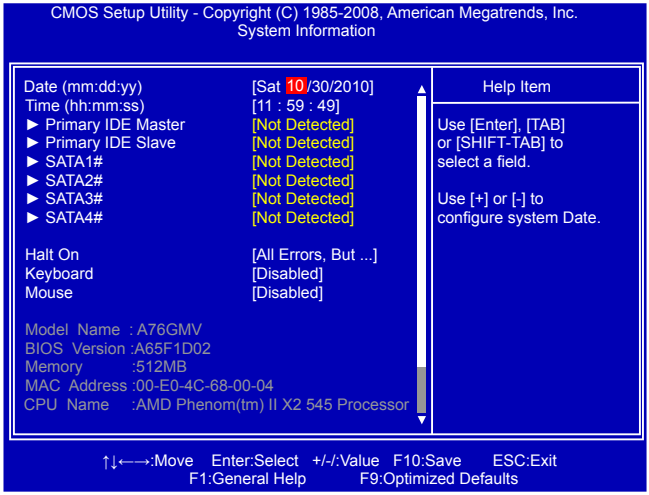
Save setting values to CMOS and exit.

► **Exit Without Saving**

Do not change anything and exit the setup.

System Information

This sub-menu is used to set up the standard BIOS features, such as the date, time, floppy drive and so on. Use the arrow up/down keys to select an item, then use the <+> or <-> keys to change the setting.


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
System Information
Date (mm:dd:yy) [Sat 10/30/2010]
Time (hh:mm:ss) [11 : 59 : 49]
► Primary IDE Master [Not Detected]
► Primary IDE Slave [Not Detected]
► SATA1# [Not Detected]
► SATA2# [Not Detected]
► SATA3# [Not Detected]
► SATA4# [Not Detected]
Halt On [All Errors, But ...]
Keyboard [Disabled]
Mouse [Disabled]
Model Name : A76GMV
BIOS Version :A65F1D02
Memory :512MB
MAC Address :00-E0-4C-68-00-04
CPU Name :AMD Phenom(tm) II X2 545 Processor
Help Item
Use [Enter], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

► Date (mm:dd:yy)

<weekday><month><date> <year> format.

Day—weekday from Sun. to Sat., this message is automatically displayed by BIOS (Read Only).

Month—month from 1 to 12.

Date—date from 1 to 31.

Year—year, set up by users.

Use [ENTER], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to input the value.

► Time (hh:mm:ss)

This item allows you to configure the desired time. Use [ENTER] to enter the setting, then use [TAB] to move forward a field. Use [+] or [-] to input the value.

The three fields of the setting are <hour> : <minute> : <second> respectively.

► Primary IDE Master/Slave, SATA1#/SATA2#/SATA3#/SATA4#

While entering setup, BIOS automatically detects the presence of IDE devices, and you can enable or disable the related mode and technology for the relevant device. This item displays the drive information of IDE devices.

► Halt On

This category determines whether or not the computer will stop if an error is detected during powering up.

[All Errors] : All errors can result in system halt.

[All Errors But...] : All errors but keyboard or mouse can result in system halt. The halt condition can be enabled/disabled in the next two settings.

► Keyboard

The system boot will not stop for a keyboard error if you enabled this item.

► **Mouse**

The system boot will not stop for a mouse error if you enabled this item.

► **Model Name**

Model name of this product.

► **BIOS Version**

It displays the current BIOS ID/version. User can check this information and discuss with the field service people if a BIOS upgrade is needed.

► **Memory**

This item displays the current memory size. The size is depending on how many memory modules were installed in your system before powering on.

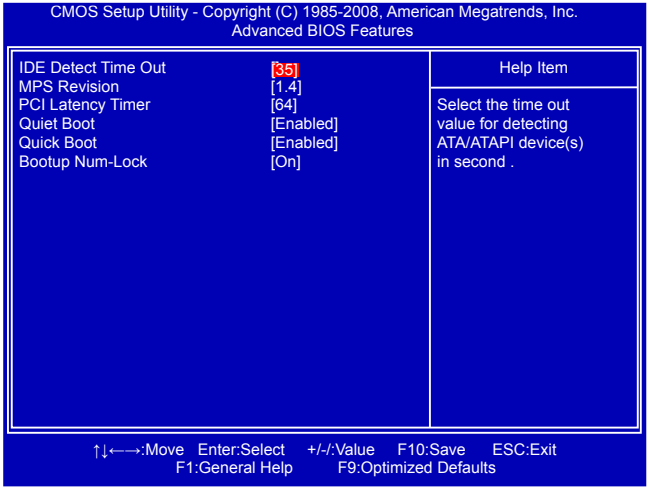
► **MAC Address**

This item shows the onboard LAN MAC address.

► **CPU Name**

It displays the current CPU name.

Advanced BIOS Features


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Advanced BIOS Features
IDE Detect Time Out [35]
MPS Revision [1.4]
PCI Latency Timer [64]
Quiet Boot [Enabled]
Quick Boot [Enabled]
Bootup Num-Lock [On]
Help Item
Select the time out value for detecting ATA/ATAPI device(s) in second .
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

► **IDE Detect Timer Out**

This item is used to select the time out value for detecting ATA/ATAPI devices. If the checking time is over the set value, the system will skip it.

► **MPS Revision**

This feature is only applicable to multiprocessor motherboards as it specifies the version of the MPS that the motherboard will use. The MPS is a specification by which PC manufacturers design and build CPU architecture systems with two or more processors. MPS 1.1 was the original specification. MPS version 1.4 adds extended configuration tables for improved support of multiple PCI bus configurations and greater expandability in the future. In addition, MPS 1.4 introduces support for a secondary PCI bus without requiring a PCI bridge. If your operating system comes with support for MPS 1.4, you should keep the setting as the default 1.4. You also need to enable MPS 1.4 support if you need to make use of the secondary PCI bus on a motherboard that doesn't come with a PCI bridge. You should only leave it as 1.1 only if you are running an older operating system that only supports MPS 1.1.

► **PCI Latency Timer**

This item is used to set the PCI latency timer. The value is in unit of PCI cycle for PCI device latency timer register. Setting values are 32, 64, 96, 128, 160, 192, 224, 248.

This feature controls how long each PCI device can hold the bus before another takes over. The larger the value, the longer the PCI device can retain control of the bus. Low values for the PCI Latency Timer will reduce the effective PCI bandwidth while higher values means every PCI device will have to wait longer before they can get access to the bus, but when they do get access, they can conduct their transactions for a longer time. Normally, a default value of 64 cycles is set. Some PCI devices may not agree with longer latency times so if you start facing problems like stuttering sound or a less responsive system, reduce the latency. Higher values will actually reduce performance as too much time may be allocated to each PCI deviceto the disadvantage of other devices on the bus.

► **Quiet Boot**

This item is used to enable/disable the quiet boot.

[Disabled] : Displays the normal POST messages.

[Enabled] : Displays OEM customer logo instead of POST messages.

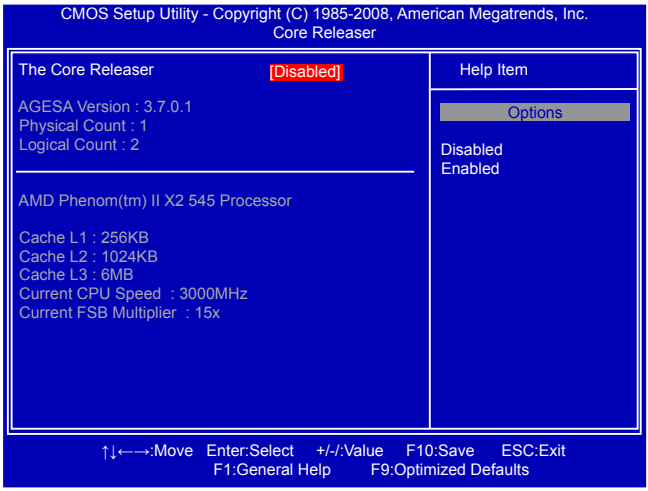
► **Quick Boot**

While Enabled, this option allows BIOS to skip certain tests while booting, this will shorten the time needed to boot the system.

► **Bootup Num-Lock**

This item defines if the keyboard Num Lock key is active when your system is started. The available settings are: On (default) and Off.

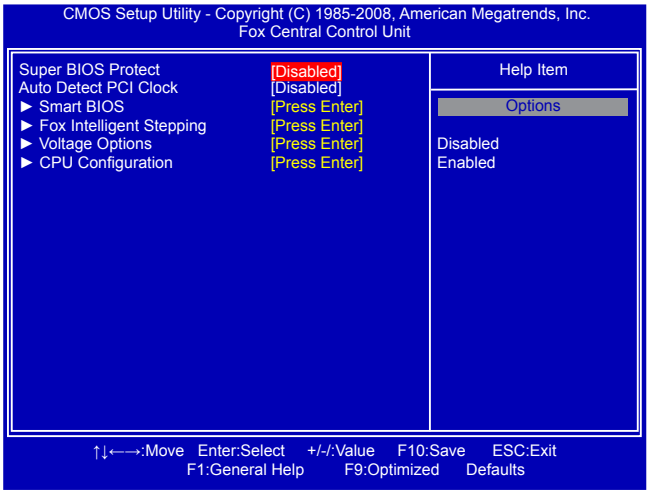
Core Releaser



► **The Core Releaser**

This option is used to disabled or enabled the Core Releaser function. The default value: [Disabled].

Fox Central Control Unit


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Fox Central Control Unit
Super BIOS Protect [Disabled]
Auto Detect PCI Clock [Disabled]
► Smart BIOS [Press Enter]
► Fox Intelligent Stepping [Press Enter]
► Voltage Options [Press Enter]
► CPU Configuration [Press Enter]
Help Item
Options
Disabled
Enabled
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

► **Super BIOS Protect**

To protect the system BIOS from virus attack, there is a BIOS write-protection mechanism provided. Super BIOS Protect function protects your BIOS from being affected by viruses, e.g. CIH.

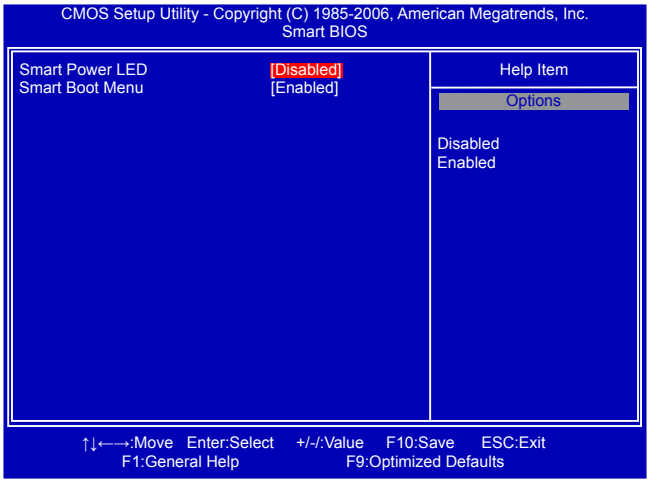
► **Auto Detect PCI Clock**

This option is used to auto detect PCI slot. When enabled, the system will turn off clock of the empty PCI slot to reduce EMI (Electromagnetic Interference).

► **Smart BIOS / Fox Intelligent Stepping / Voltage Options / CPU Configuration**

Press <Enter> to go to the submenu.

Smart BIOS



► Smart Power LED

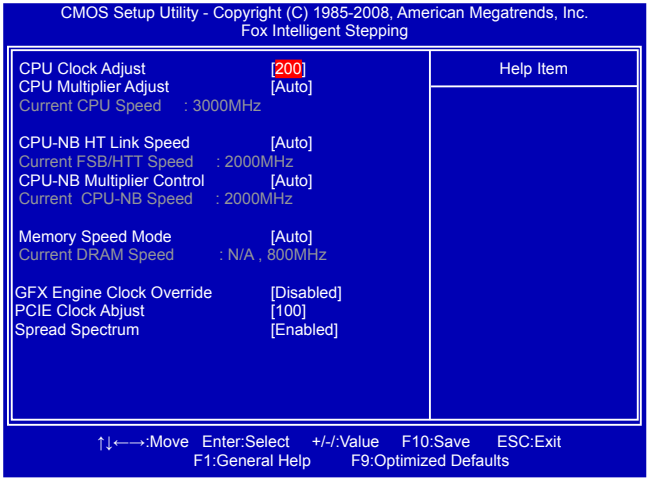
Smart Power LED is a feature built on your motherboard to indicate different states during Power On Self Test (POST). The LED is located at the front panel, and it displays POST state by different long-short blinking intervals. You can always leave this state enabled.

System Status	Power LED Status	Stop Blinking Condition
Normal	Always On	Always On
No Memory	Continue blinking On (1sec.), Off (1sec.)	Reboot & Memory OK
No Display	Continue blinking On (2sec.), Off (2sec.)	Reboot & Display OK
Post Error Message	Quick blinking twice (1/3sec. On, 1/3sec. Off), one long On (1sec.), continuously.	Enter Setup or Skip
No CPU Fan	Continue blinking On (1/2sec.), Off (1/2sec.)	Reboot & Fan OK

► Smart Boot Menu

When PC starts, it will ask you to press [Del] key to enter setup or press [Esc] key to enter smart boot menu. If [Disabled] is selected, then pressing [Esc] has no function. This also prevents user without password trying to get into your computer through smart boot menu.

Fox Intelligent Stepping


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Fox Intelligent Stepping
CPU Clock Adjust [200]
CPU Multiplier Adjust [Auto]
Current CPU Speed : 3000MHz
CPU-NB HT Link Speed [Auto]
Current FSB/HTT Speed : 2000MHz
CPU-NB Multiplier Control [Auto]
Current CPU-NB Speed : 2000MHz
Memory Speed Mode [Auto]
Current DRAM Speed : N/A , 800MHz
GFX Engine Clock Override [Disabled]
PCIE Clock Abjust [100]
Spread Spectrum [Enabled]
Help Item
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

► **CPU Clock Adjust**

This option is used to adjust the CPU clock.

► **CPU Multiplier Adjust**

This option is used to adjust the CPU Clock Ratio. Multiply CPU clock with this ratio, you can get the CPU speed. Increase this ratio may overclock your CPU. This option will be valid if your CPU ratio is unlocked and will be displayed only if your CPU is supporting this feature.

► **CPU-NB HT Link Speed**

HT stands for HyperTransport bus. The CPU<->NB HT Speed option controls the physical speed of the CPU to Northbridge HT link. The physical speed of the link is determined by multiplying the CPU clock with the CPU<->NB HT Speed setting.

► **CPU-NB Multiplier Control**

This item is used to select CPU-NB Multiplier run as Auto or Manual mode.

Select [Auto] for CPU-NB default speed.

Select [Manual], then CPU-NB speed is manually selected according to the setting of “CPU-NB Multiplier Adjust”.

► **Memory Speed Mode**

This item is used to enable/disable provision of DRAM timing by SPD device. The Serial Presence Detect (SPD) device is a small EEPROM chip, mounted on a memory module. It contains important information about the module’s speed, size, addressing mode and various other parameters, so that the motherboard memory controller (chipset) can better access the memory device.

Select [Auto] for SPD enable mode.

Select [Limit], the DRAM speed will not exceed the specified value listed in the “Memory Speed Adjust” item. If SPD value is faster than “Memory Speed Adjust” value, it will run at the specified “Memory Speed Adjust” speed. Otherwise, SPD value is selected.

Select [Manual], then DRAM speed is manually selected according to the set value of “Memory Speed Adjust”.

► **GFX Engine Clock Override**

This item allows you to enable/disable GFX Engine Clock Override support.

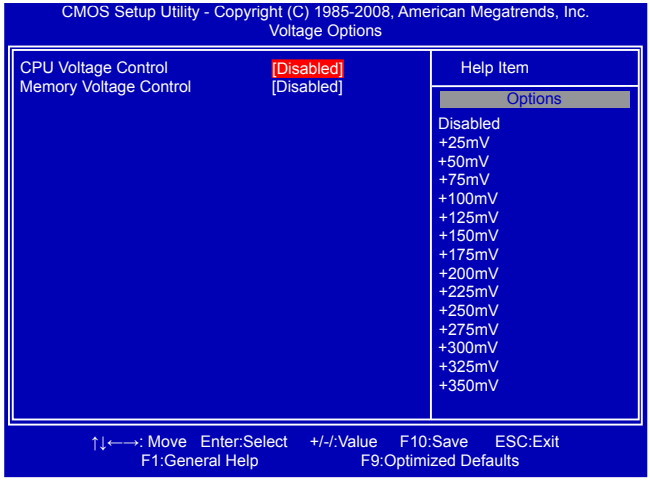
► **PCI Express Clock Override**

This option is used to adjust the speed of PCI Express slot. It may enhance the graphics card speed.

► **Spread Spectrum**

If you enabled this function, it can significantly reduce the EMI (Electromagnetic Interference) generated by the system, so to comply with FCC regulation. But **if overclocking is activated,** you had better disable it.Voltage Options

Voltage Options



► **CPU Voltage Control**

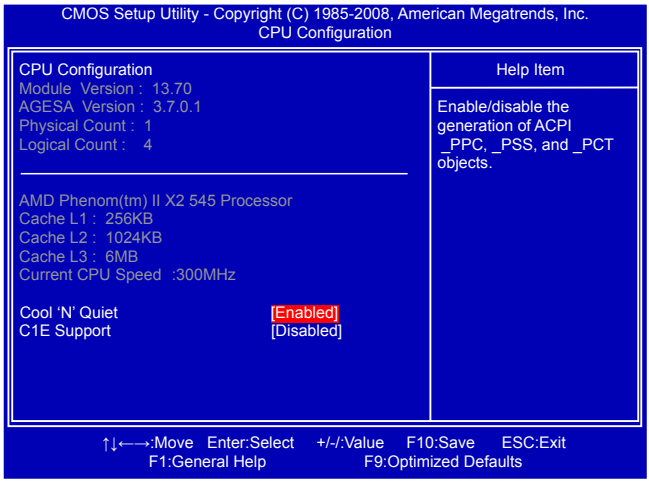
This option is used to change the CPU voltage in a step of 25mV. The voltage can be incremented from +25mV to +775mV.

► **Memory Voltage Control**

This option is used to change the DRAM voltage in a step of 100mV. The voltage can be incremented from +100mV to +300mV.

CPU Configuration

This menu shows most of the CPU specifications.


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
CPU Configuration
CPU Configuration
Module Version : 13.70
AGESA Version : 3.7.0.1
Physical Count : 1
Logical Count : 4
AMD Phenom(tm) II X2 545 Processor
Cache L1 : 256KB
Cache L2 : 1024KB
Cache L3 : 6MB
Current CPU Speed :300MHz
Cool 'N' Quiet [Enabled]
C1E Support [Disabled]
Help Item
Enable/disable the generation of ACPI _PPC, _PSS, and _PCT objects.
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

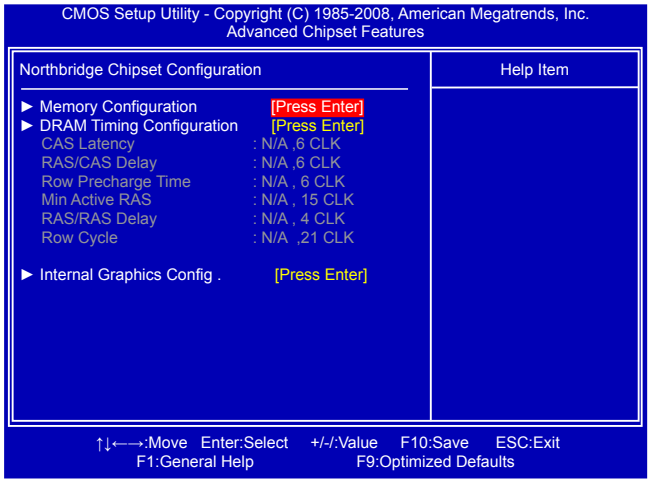
► **Cool 'N' Quiet (Appear only when CPU supports)**

This option helps lowering down the CPU frequency and voltage when system is idling. When the CPU speed is slowing down, the temperature will drop as well.

► **C1E Support**

C1E represents Enhanced HALT State. It is a feature which CPU uses to reduce power consumption when in halt state. C1E drops the CPU's multiplier and voltage to lower levels when a HLT (halt) command is issued. This item is used to enable/disable the C1E support.

Advanced Chipset Features


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Advanced Chipset Features
Northbridge Chipset Configuration
Help Item
► Memory Configuration [Press Enter]
► DRAM Timing Configuration [Press Enter]
CAS Latency : N/A ,6 CLK
RAS/CAS Delay : N/A ,6 CLK
Row Precharge Time : N/A , 6 CLK
Min Active RAS : N/A , 15 CLK
RAS/RAS Delay : N/A , 4 CLK
Row Cycle : N/A ,21 CLK
► Internal Graphics Config . [Press Enter]
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

► Memory Configuration / DRAM Timing Configuration

Press <Enter> to go to its submenu.

The following six items display the values configured at the settings of "DRAM Timing Mode".

► CAS Latency

This item shows the CAS latency. The CAS Latency is the number of clock cycles that elapse from the time the request for data is sent to the actual memory location until the data is transmitted from the module.

► RAS / CAS Delay

This item displays a delay time (in clock cycles) between the CAS and RAS strobe signals.

► Row Precharge Time

This item shows the number of clock cycles taken between issuing of the precharge command and the active command. The DRAM row precharge time is in unit of clock cycle.

► Min Active RAS

Displays the number of clock cycles taken between a bank active command and issuing of the precharge command.

► RAS / RAS Delay

This item displays a delay time (in clock cycles) between the RAS and RAS strobe signals.

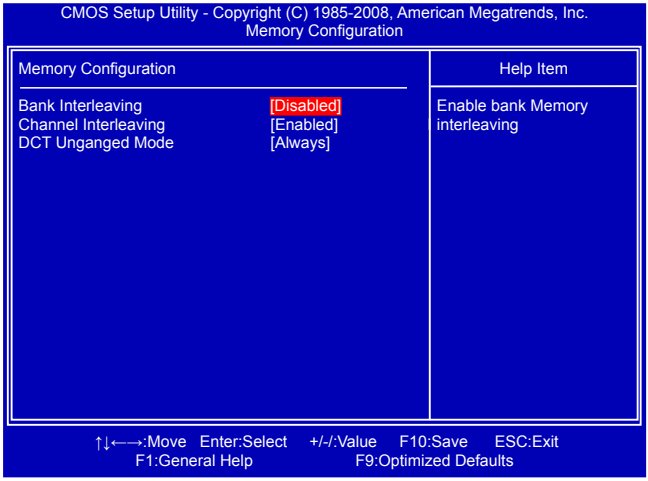
► Row Cycle

This item shows the minimum timing interval between successive active commands to the same bank. The row cycle time is in unit of clock cycle.

► Internal Graphics config

Press <Enter> to go to its submenu.

Memory Configuration



► **Bank Interleaving**

Interleaving allows banks of SDRAM to alternate their refresh and access cycles. One bank will undergo its refresh cycle while another is being accessed. This improves memory performance by masking the refresh cycles of each memory bank. However, bank interleaving only works if the addresses requested consecutively are not in the same bank.

► **Channel Interleaving**

Dual channel (Interleaved) mode offers the highest throughput for real world applications. Dual channel mode is enabled when the installed memory capacities of both DIMM channels are equal. If different speed DIMMs are used between channels, the slowest memory timing will be used.

► **DCT Unganged Mode**

DCT stands for DRAM Controller.

Ganged refers to the use of both DRAM controllers within a memory controller acting in concert to access memory. For a description of ganged (128-bit DRAM data width) and unganged (64-bit DRAM data width) DRAM modes:

Ganged channels (DDR3) :

- DCT channels A and B can be ganged as a single logical 128-bit DIMM.
- Offers highest DDR3 bandwidth.
- Requires both DIMMs in a logical pair to have identical size and timing parameters, both DCTs programmed identically.

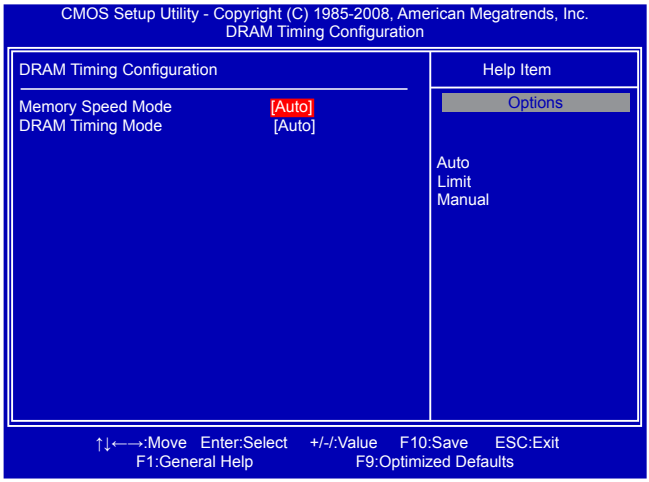
Unganged channels

- DCT channels A and B operate as two completely independent 64-bit channels (both channels operate at the same frequency).
- Reduce DRAM page conflicts – more concurrent open dram pages .
- Better bus efficiency.

Burst lengths supported

When both DCTs are enabled in unganged mode, BIOS must initialize the frequency ofeacDCT in order.

DRAM Timing Configuration



► **Memory Speed Mode**

This item is used tu enable/disable provision of DRAM timing by SPD device.The Serial Pres ence Detect (SPD) devise is a small EEPROM chip,mounted on a DDR3 memory module.It contains inportant information about the module's speed,size,addressing mode and various other parameters,so that the motherboard memory controller (chipset) can better access the memory device.

Select [AUTO] for SPD enable mode.

Select [Limit], the DRAM speed will not exceed the specified value listed in the "Memory"

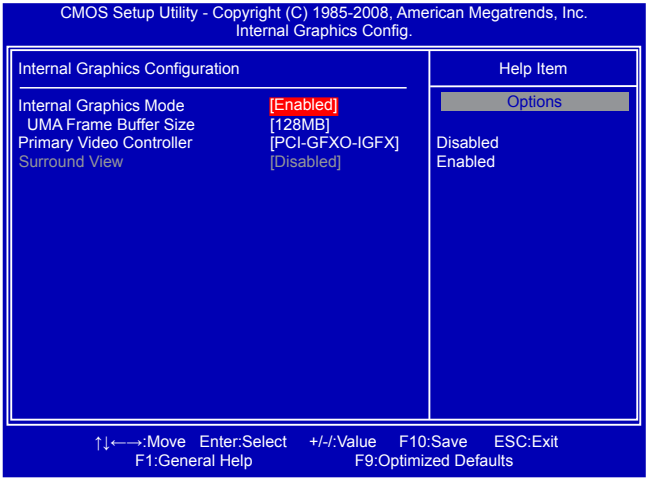
Select [Manual],then DRAM speed is manually selected according to the set value of "Memory Speed Adjust".

► **DRAM Timing Mode**

When both DCTs (DRAM controller) are enabled in unganged mode, BIOS must initialize the frequency of each DCT in order, you also can configure the timings manually.

Settings are : [Auto], [DCT 0], [DCT 1], [Both].

Internal Graphics Config



► **Internal Graphics Mode**

Enable/Disable the integrated UMA graphics controller.

► **UMA Frame Buffer Size**

Allocates system memory for use as video memory to ensure the most efficient use of available resources for maximum 2D/3D graphics performance.

This is a memory allocation method addition to the Unified Memory Architecture (UMA) concept, wherein a static amount of page-locked graphics memory is allocated during driver initialization. This fixed amount of memory will provide the user with a guaranteed graphics memory at all times, and will no longer be available to the OS.

► **Primary Video Controller**

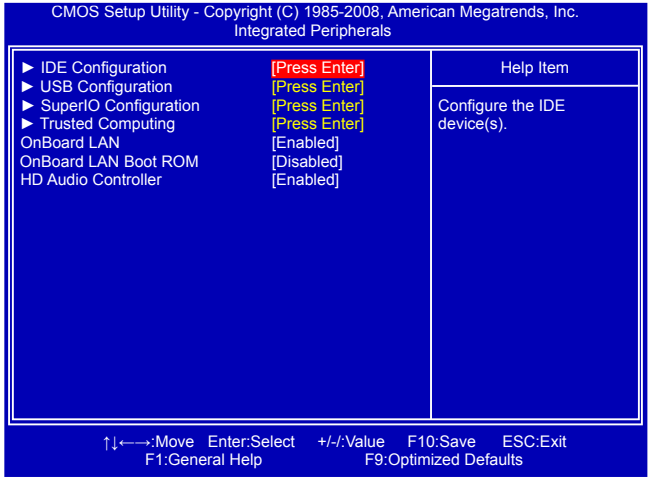
This item is used to select which graphics controller is used as the primary boot device.

► **Surround View**

Surround View is the ATI technology that provides multi-graphics controller display capability for both the ATI PCIe-based graphics card and the ATI integrated graphics processor (IGP). Enabling SurroundView does not impact display modes (resolution and color depth) or performance. The display mode of each output is controlled independently by the graphics controller connected to it.

1. When using a non-ATI PCI Express (PCIe) graphics card, Surround View is not supported. The integrated graphics processor (IGP) is automatically disabled, and the system memory allocated to the IGP is freed for other use.
2. PCIe graphics card is the default first display device. Enabling SurroundView in the BIOS enables the integrated UMA graphics controller, which in turn makes available up to two additional graphics outputs. When enabling the integrated UMA graphics controller, system memory will be reallocated.

Integrated Peripherals



► **IDE Configuration / USB Configuration / SuperIO Configuration / Trusted Computing**

Press <Enter> to go to relative submenu.

► **OnBoard LAN**

This item is used to enable or disable the onboard LAN controller.

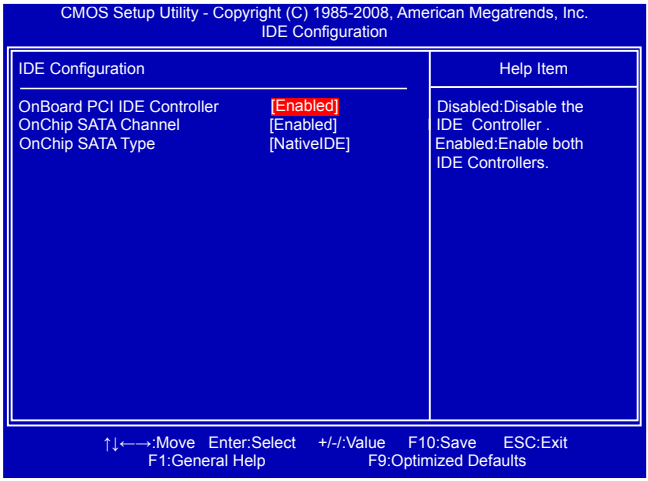
► **OnBoard LAN Boot ROM**

This item is used to enable or disable the onboard LAN boot optional ROM. A LAN boot ROM lets you set up a diskless workstation on the network. By installing a boot ROM in the network board, you can enable a client PC system on the network to be booted remotely.

► **HD Audio Controller**

This item is used to enable or disable the HD Audio controller.

IDE Configuration


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
IDE Configuration
IDE Configuration
Help Item
OnBoard PCI IDE Controller [Enabled]
OnChip SATA Channel [Enabled]
OnChip SATA Type [NativeIDE]
Disabled:Disable the IDE Controller .
Enabled:Enable both IDE Controllers.
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

► **OnBoard PCI IDE Controller**

[Disabled]: Disable the integrated IDE controller.

[Enabled]: Enable IDE controllers.

► **OnChip SATA Channel**

[Disabled] : Disable SATA ports 1, 2, 3, 4.

[Enabled] : Enable SATA ports 1, 2, 3, 4.

► **OnChip SATA Type**

This item is used to set the operating mode of your SATA ports.

Options : [Native IDE]; [RAID]; [AHCI]; [Legacy IDE].

[Native IDE] - This configures the SATA ports to support native IDE mode.

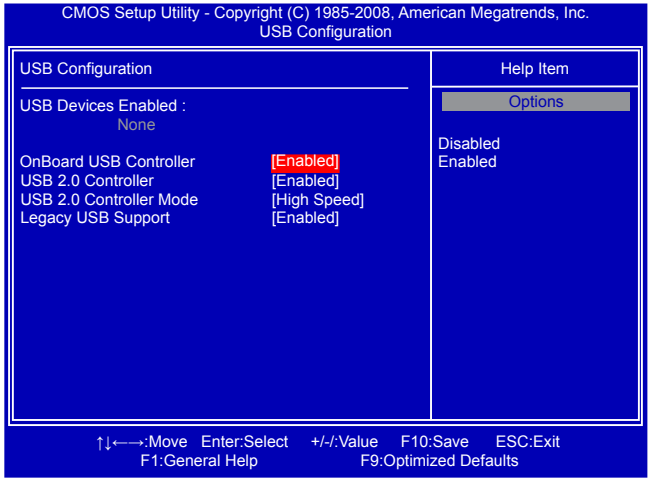
[RAID] - When you enable RAID, it means all your SATA drives must also support AHCI.

[AHCI] - The Advanced Host Controller Interface (AHCI) specification describes the register level interface for a Host Controller for Serial ATA. The specification includes a description of the hardware/software interface between system software and the host controller hardware. AHCI provides more advanced features including SATA features, but some SATA drives may not support AHCI, unless they are labeled with AHCI support in its specification.

If your motherboard supporting AHCI, and you have a SATA device, which also supports AHCI, then you can select IDE option to have fair performance (only PATA, SATA level), or you can select AHCI to get its best performance.

[Legacy IDE] - This configures the SATA ports to support legacy IDE mode which is running for old Windows system.

USB Configuration



► **OnBoard USB Controller**

This item is used to enable or disable the onboard USB controller.

► **USB 2.0 Controller**

This item is used to enable or disabled the enhanced host controller interface for USB.

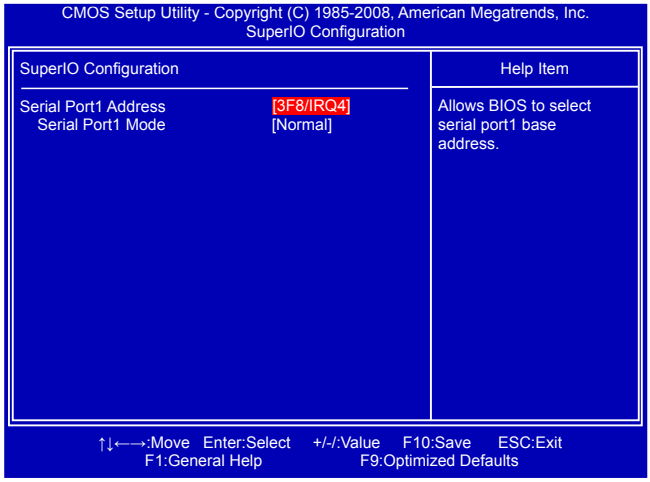
► **USB 2.0 Controller Mode**

This item is used to set the transmission rate mode of USB 2.0. This function only works underDOS mode. The available settings are: [High Speed] in 480Mbps; [Full Speed] in 12Mbps.

► **Legacy USB Support**

This item is used to enable the support for USB devices on legacy OS. If you have a USB keyboard or mouse, set to auto or enabled.

SuperIO Configuration


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
SuperIO Configuration
SuperIO Configuration
Help Item
Serial Port1 Address [3F8/IRQ4]
Serial Port1 Mode [Normal]
Allows BIOS to select serial port1 base address.
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

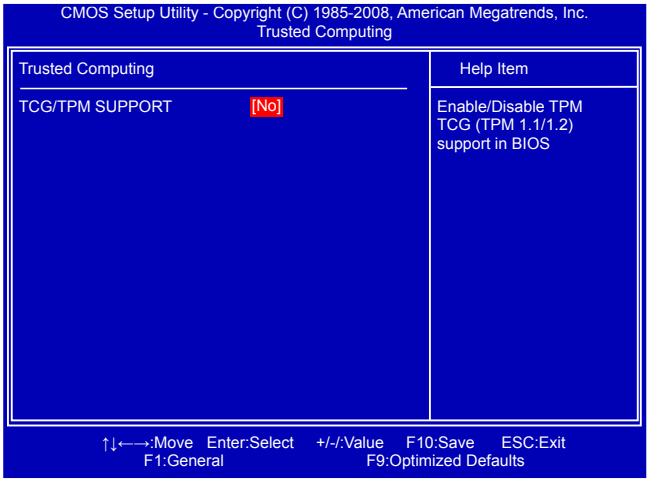
► **Serial Port1 Address**

This item is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port1.

► **Serial Port1 Mode**

This item enables you to determine the transfer mode of the serial port 1.

Trusted Computing



► **TCG/TPM SUPPORT**

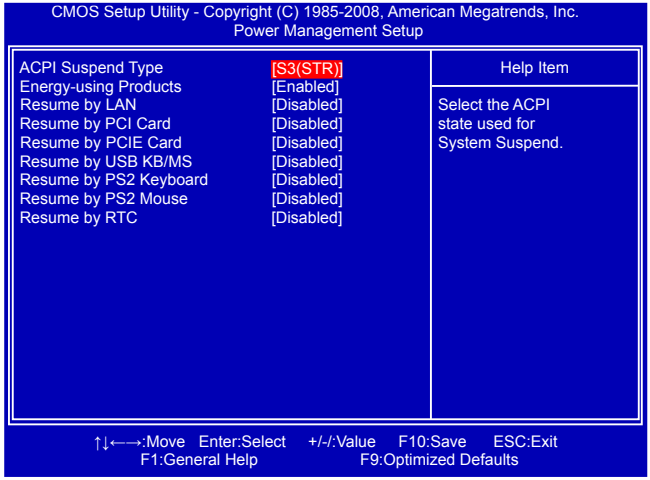
Trusted Computing Group (TCG) members develop and promote open, vendor-neutral, industry standard specifications for trusted computing building blocks and software interfaces across multiple platforms

TPM (Trusted Platform Module) is a specification promoted by TCG. A Trusted Platform Module offers facilities for secure generation of cryptographic keys.

The TPM Work Group is chartered to create the Trusted Platform Module (TPM) specification. The definition of the TPM architecture comes from the TC and the TPM Work Group defines the implementation of that architecture. Work group members should have a working knowledge of security in relation to the design and usage of cryptographic modules. Members should also have a working knowledge of cryptographic techniques including public-key cryptography, cryptographic algorithms and protocols.

This item is used to enable/disable the function of TCG/TPM support.

Power Management Setup


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Power Management Setup
ACPI Suspend Type [S3(STR)]
Energy-using Products [Enabled]
Resume by LAN [Disabled]
Resume by PCI Card [Disabled]
Resume by PCIE Card [Disabled]
Resume by USB KB/MS [Disabled]
Resume by PS2 Keyboard [Disabled]
Resume by PS2 Mouse [Disabled]
Resume by RTC [Disabled]
Help Item
Select the ACPI state used for System Suspend.
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

ACPI (Advanced Configuration and Power Interface) is an open industry standard interfaces enabling OS-directed configuration, power management, and thermal management of mobile, desktop, and server platforms. It defines five sleeping states, they are :

S1 - The S1 sleeping state is a low wake latency sleeping state. In this state, no system context is lost (CPU or chip set) and hardware maintains all system context. (also called **Power On Suspend**)

S2 - The S2 sleeping state is a low wake latency sleeping state. This state is similar to the S1 sleeping state except that the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor's reset vector after the wake event.

S3 - The S3 sleeping state is a low wake latency sleeping state where all system context is lost except system memory. CPU, cache, and chip set context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context. Control starts from the processor's reset vector after the wake event. (also called **Suspend to RAM**)

S4 - The S4 sleeping state is the lowest power, longest wake latency sleeping state supported by ACPI. In order to reduce power to a minimum, it is assumed that the hardware platform has powered off all devices. Platform context is maintained. (also called **Suspend to Disk**)

S5 - The S5 state is similar to the S4 state except that the OS does not save any context. The system is in the "soft" off state and requires a complete boot when it wakes. Software uses a different state value to distinguish between the S5 state and the S4 state to allow for initial boot operations within the BIOS to distinguish whether or not the boot is going to wake from a saved memory image.

► ACPI Suspend Type

This item is used to set the energy saving mode of the ACPI function. When you select "S1 (POS)" mode, the power is always on and computer can be resumed at any time. When you select "S3 (STR)" mode, the power will be down after a period of time. The status of the-

computer before it entering STR will be saved in memory, and the computer can quickly return to previous state when the STR function wakes.

► **Energy-using Products**

This item is used to enable/disable the EuP(Energy-using Products) feature. When enable, the suspend power of the chipset will be cut off in S5 suspend mode in order to reduce the power consumption of motherboard.

Enabled: S1/S3/S4 is normal, S5 wake up only by pressing the power button.

Disabled: Normal ACPI function.

► **Resume by LAN**

This item is used to enable/disable LAN to generate a wake up.

► **Resume by PCI Card**

This item is used to enable/disable the PCI Card to generate a wake up.

► **Resume by PCIE Card**

This item is used to enable/disable the PCIE Card to generate a wake up.

► **Resume by USB KB/MS**

This item is used to enable/disable the USB Devices to generate a wake up.

► **Resume by PS2 Keyboard**

This item is used to enable/disable the PS2 keyboard to generate a wake up.

► **Resume by PS2 Mouse**

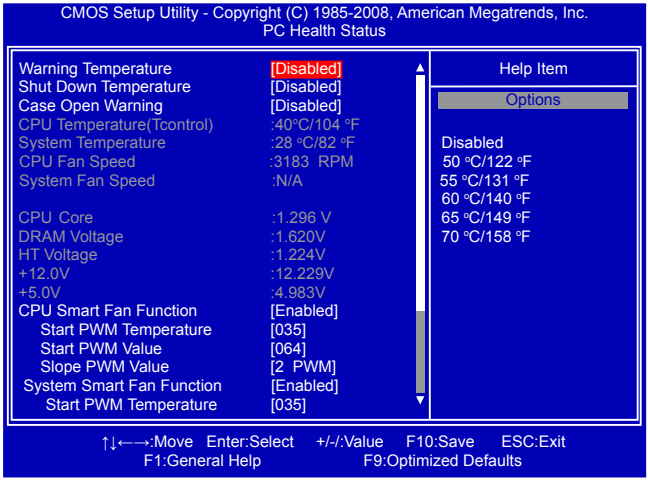
This item is used to enable/disable the PS2 mouse to generate a wake up.

► **Resume by RTC**

This item is used to enable/disable RTC alarm event to generate a wake up.

RTC is system real time clock.

PC Health Status



► **Warning Temperature**

This option is used to set the warning temperature for the system. When the temperature of CPU is higher than the set value, the motherboard will send out warning beep.

► **Shut Down Temperature**

This item is used to set the system temperature upper limit. When the temperature exceeds the set value, the system will shut down automatically.

This function works only when your operating system is supporting ACPI.

► **Case Open Warning**

This item is used to enable or disable case open warning function.

► **CPU Temperature(Tcontrol)/System Temperature**

The CPU/System temperature are automatically detected and displayed by the system.

► **CPU Fan/System Fan Speed**

The CPU fan/System fan speed are automatically detected and displayed by the system.

► **CPU Core/DRAM Voltage/HT Voltage/+5.0V/+12.0V**

The current voltages are automatically detected and displayed by the system.

► **CPU Smart Fan Function / System Smart Fan Function**

This option is used to enable or disable smart fan function.

► **Start PWM Temperature**

It allows you set a temperature value from which smart fan starts its operation.

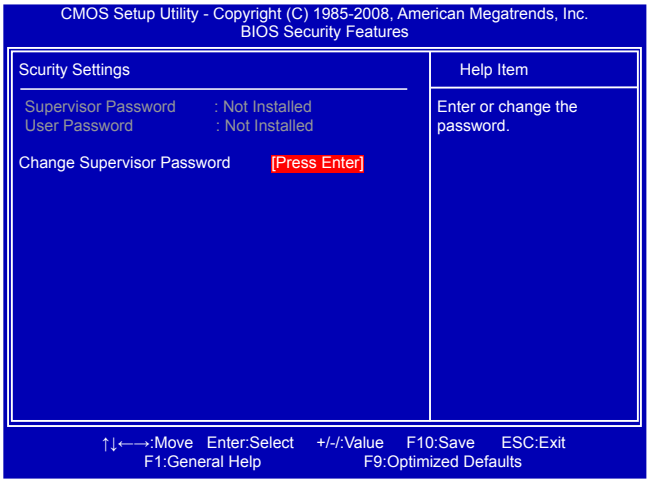
► **Start PWM Value**

It allows you to set an initial PWM value to drive the fan when the temperature reaches Start value and smart fan begins its operation. The higher PWM value can achieve the faster fan speed.

► **Slope PWM Value**

The slope controls the PWM value being stepped up or down versus temperature changes.

BIOS Security Features


CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
BIOS Security Features
Scurity Settings
Supervisor Password : Not Installed
User Password : Not Installed
Change Supervisor Password [Press Enter]
Help Item
Enter or change the password.
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Optimized Defaults

► **Change Supervisor Password**

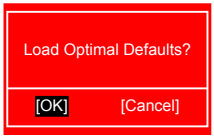
This item is used to install or change supervisor password. After you input Supervisor password, it then will ask you to input user password optionally.

Load Optimal Defaults

Optimal defaults are the best settings of this motherboard. Always load the Optimal defaults after updating the BIOS or after clearing the CMOS values.

Select this option and press Enter, it will pop out a dialogue box to let you load the defaults. Select <OK> and then press <Enter> to load the defaults. Select <Cancel> and press <Enter>, it will not load.

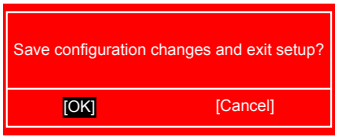
By this default, BIOS have set the optimal performance parameters of system to improve the performances of system components. But if the optimal performance parameters to be set cannot be supported by your hardware devices (for example, too many expansion cards were installed), the system might fail to work.



Save & Exit Setup

When you select this option and press <Enter>, a message will be displayed in the center of the screen:

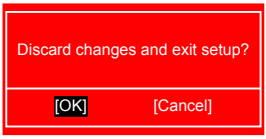
Select [OK] to save your changes to CMOS and exit the program, select [Cancel] or <ESC> to return to the main menu.



Exit Without Saving

If you select this option and press <Enter>, the following message will be displayed in the center of the screen:

Select [OK] to exit CMOS without saving your modifications, select [Cancel] or <ESC> to return to the main menu.



It includes the following information :

- RAID Introduction
- Install SATA Hard Disks
- RAID Configuration
- Create RAID Driver Disk
- Install Windows OS

The RAID BIOS Setup pictures shown in this chapter are for reference only, please refer to the practical screen.

4-1 RAID Introduction

RAID 0 (Striped)
RAID 0 reads and writes sectors of data interleaved among multiple drives. If any disk member fails, it affects the entire array. The disk array data capacity is equal to the number of drive members times the capacity of the smallest member. RAID 0 does not support fault tolerance.

RAID 1 (Mirror)
RAID 1 writes duplicate data onto a pair of drives and reads both sets of data in parallel. If one of the mirrored drives suffers a mechanical failure or does not respond, the remaining drive will continue to function. Due to redundancy, the drive capacity of the array is the capacity of the smallest drive.

RAID 10 (Striped Mirror)
RAID 10 is a combination of striping and mirroring. This configuration provides optimal speed and reliability, but you need four SATA hard disks.

RAID 5 (Parity)
RAID 5 provides data striping at the byte level and also stripes error correction information. This results in excellent performance and good fault tolerance. Level 5 is one of the most popular implementations of RAID.

RAID Ready
A "RAID Ready" system is a specific system configuration that, with the addition of a second Serial ATA hard drive, can be seamlessly migrated to a configuration that provides either improved storage performance or data protection from a single hard drive failure.

JBOD (Span)
JBOD stands for “Just a Bunch of Disks”. Each drive is accessed as if it were on a standard SCSI host bus adapter. This is useful when a single drive configuration is needed, but it offers no speed improvement or fault tolerance. A spanned volume is a formatted partition which data is stored on more than one hard disk, yet appears as one volume. Unlike RAID, spanned volumes have no fault-tolerance, so if any disk fails, the data on the whole volume could be lost. Additionally, the system or boot partitions cannot be included in a spanned volume. FAT16/32 and NTFS file systems may be used, and the volume can span up to 32 hard disks.

CAUTION

The nember of hard disks needed in different RAID level:

RAID Level	RAID 0	RAID 1	RAID 10	RAID 5	RAID Ready	JBOD
Disk NO.	>=2	2	>=4	>=3	>=1	>=1

4-2 Install SATA Hard Disks

1. Shut down your computer.
2. Install SATA hard disks into the drive bays.
3. Connect all the SATA power and SATA data cables.

4-3 RAID Configuration

This motherboard supports RAID 0, RAID 1 and RAID10 functions.
Hardware and software you may need here :

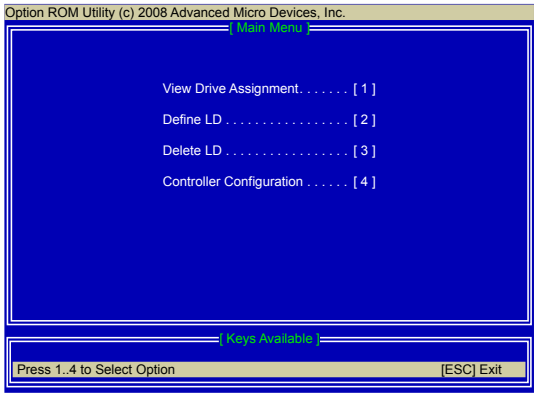
- A floppy drive
- A floppy disk(Or USB disk for Vista)
- Several SATA hard disks
- A DVD-ROM drive
- A motherboard driver CD
- Windows XP or Vista Install CD

RAID Enable in BIOS

1. Boot up your computer, enter the BIOS setup by pressing [Del] key during POST.
2. Set the “OnChip SATA Type” to "RAID".
3. Press [F10] to save the setting, then PC will reboot itself.

Option ROM Utility

When PC is rebooting, press [Ctrl-F] key during POST to enter the main menu of the Option ROM Utility.

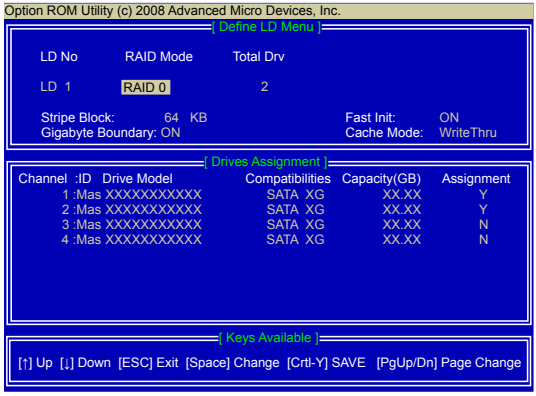

Option ROM Utility (c) 2008 Advanced Micro Devices, Inc.
[Main Menu]
View Drive Assignment. . . . . [1]
Define LD . . . . . [2]
Delete LD . . . . . [3]
Controller Configuration . . . . . [4]
[Keys Available]
Press 1..4 to Select Option
[ESC] Exit

View Drive Assignment: To view the disk drive assignment status by pressing [1].
Define LD: To Create RAID by pressing [2].
Delete LD: To Delete RAID by pressing [3].
Controller Configuration: To view the SATA controller configuration by pressing [4].
Exit: Press [Esc] to exit AMD Option ROM Utility.

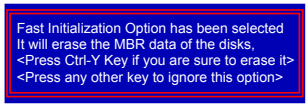
Create RAID array

Here we create RAID 0 as an example:

1. Press [2] in the main menu, "Define LD Menu" appears and the "LD 1" row is highlight, press [Enter], the scree is shown as below:

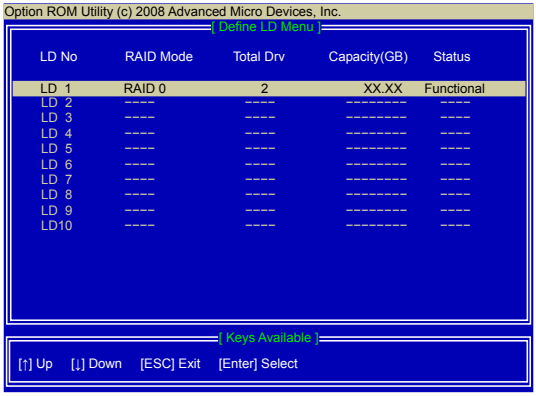

Option ROM Utility (c) 2008 Advanced Micro Devices, Inc.
[Define LD Menu]
LD No RAID Mode Total Drv
LD 1 RAID 0 2
Stripe Block: 64 KB
Gigabyte Boundary: ON
Fast Init: ON
Cache Mode: WriteThru
[Drives Assignment]
Channel :ID Drive Model Compatibilities Capacity(GB) Assignment
1 :Mas XXXXXXXXXX SATA XG XX.XX Y
2 :Mas XXXXXXXXXX SATA XG XX.XX Y
3 :Mas XXXXXXXXXX SATA XG XX.XX N
4 :Mas XXXXXXXXXX SATA XG XX.XX N
[Keys Available]
[↑] Up [↓] Down [ESC] Exit [Space] Change [Crtl-Y] SAVE [PgUp/Dn] Page Change

2. Press [Space] to select RAID 0.
3. Use [↓] key to highlight the hard disks, change any two of the drives' "Assignment" status to "Y" by pressing [Space] or [Y].
4. Press [Ctrl-Y] to save the setting, a message prompts:



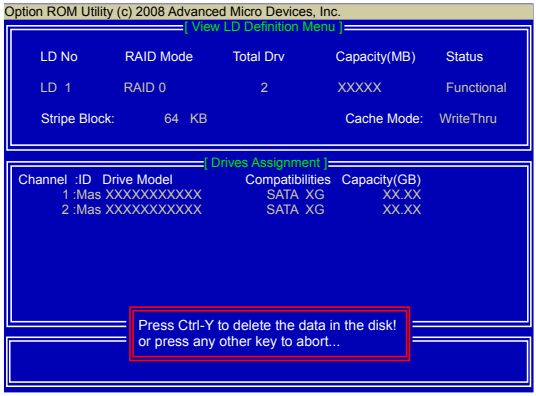
5. Press [Ctrl-Y] to clear the RAID array or press any other key to continue, another prompt appears:

6. Press [Ctrl-Y] to key in the capacity of the RAID array or press any other key to set the array to its maximum. Then you will see the created array:


Option ROM Utility (c) 2008 Advanced Micro Devices, Inc.
[Define LD Menu]
LD No RAID Mode Total Drv Capacity(GB) Status
LD 1 RAID 0 2 XX.XX Functional
LD 2 ---- ---- -------- ----
LD 3 ---- ---- -------- ----
LD 4 ---- ---- -------- ----
LD 5 ---- ---- -------- ----
LD 6 ---- ---- -------- ----
LD 7 ---- ---- -------- ----
LD 8 ---- ---- -------- ----
LD 9 ---- ---- -------- ----
LD10 ---- ---- -------- ----
[Keys Available]
[↑] Up [↓] Down [ESC] Exit [Enter] Select

Delete RAID array

1. Press [3] in the Main Menu to enter the “Delete LD Menu”.
2. Highlight the array you want to delete and press [Del] or [Alt-D] keys.
3. Press [Ctrl-Y] if you are sure to delete the array or other keys to abort.



4-4 Create RAID Driver Disk

If you want to install Windows XP on a hard disk that is configured to RAID mode, a floppy disk with RAID driver is required during the installation. For Windows Vista, you can also use a USB flash disk with RAID driver.

Create a RAID Driver Disk in Windows:

1. Boot your computer and start Windows, put the driver CD into DVD-ROM drive.
2. Insert a floppy disk/USB disk into the floppy disk drive/USB port.
3. Depending on which platform your will install, go to **CD:\Driver\AMD\RAID\Driver\WinXP** or **WinVista**, click on RaidTool icon to start the floppy creation or copy all the files in **WinXP** or **WinVista** folder to the USB disk.
4. Follow the succeeding screen prompt to complete the process.

Create a RAID Driver Disk without entering OS:

1. Boot your computer, press [Del] during POST to enter BIOS.
2. Insert the driver CD into the optical drive.
3. Set the “1st Boot Device” to “CD/DVD-ROM”, save changes and exit.
4. Press any key when the screen prompts “Press any key to boot from the optical drive.”.
5. Press [1] to create a RAID driver disk when the prompt menu appears.
6. Insert a formatted floppy disk into the floppy disk drive, press [Enter] to continue.
7. Follow the instructions to complete the process.

4-5 Install Windows OS

Install Windows XP

1. Press [Del] during POST to enter BIOS.
2. Insert the Windows XP installation CD into the optical drive.
3. Set the “1st Boot Device” to “CD/DVD-ROM”, save changes and exit BIOS.
4. Press [F6] as soon as you see the message “Press F6 if you need to install a 3rd party SCSI or RAID driver”.
5. Insert the RAID driver floppy disk into the floppy disk drive, and press [S] to continue.
6. There will be two drivers, select "AMD AHCI Compatible RAID Controller-x86 platform" for 32bit XP or "AMD AHCI Compatible RAID Controller-x64 platform" for 64bit XP, press [Enter].
7. A confirmation message appears to double check if the driver is really what we wanted, press [Enter] to continue. Then follow the screen prompt to complete the Windows XP installation.

Install Windows Vista

1. Press [Del] during POST to enter BIOS.
2. Insert the Windows Vista installation CD into the optical drive.
3. Set the “1st Boot Device” to “CD/DVD-ROM”, save changes and exit BIOS.
4. When the screen shows “No driver were founded...”, select “Load Driver”.
5. Insert the floppy disk/USB disk into the floppy drive/USB port, then specify the location of the driver.
6. Select "AMD AHCI Compatible RAID Controller" and press "Next".
7. After the driver is loaded, the RAID hard disk will appear. Select it and press "Next" to continue the OS installation.